3. Schematic Diagrams

3-1 DC/DC Converter (Main) - - - - - - - - - - - - - - - - - - - 3-2

3-2 System Control (Main) - 3-3

3-3 Video I/F (Main) - 3-4

3-4 Pre-Amp PRML. (Main) - 3-5

3-5 DV-1chip - 3-6

3-6 Line-IN - 3-7

3-7 PHY (IEEE1394) - 3-8

3-8 Servo - 3-9

3-9 Audio - 3-10

3-10 Camera Process - 3-11

3-11 Camera DSP - 3-12

3-12 Camera Memory Block - 3-13

3-13 LCD - 3-14

3-14 EVF - 3-15

3-15 Front - 3-16

3-16 Left - 3-17

3-17 Rear - 3-18

3-18 Top - 3-19

Note

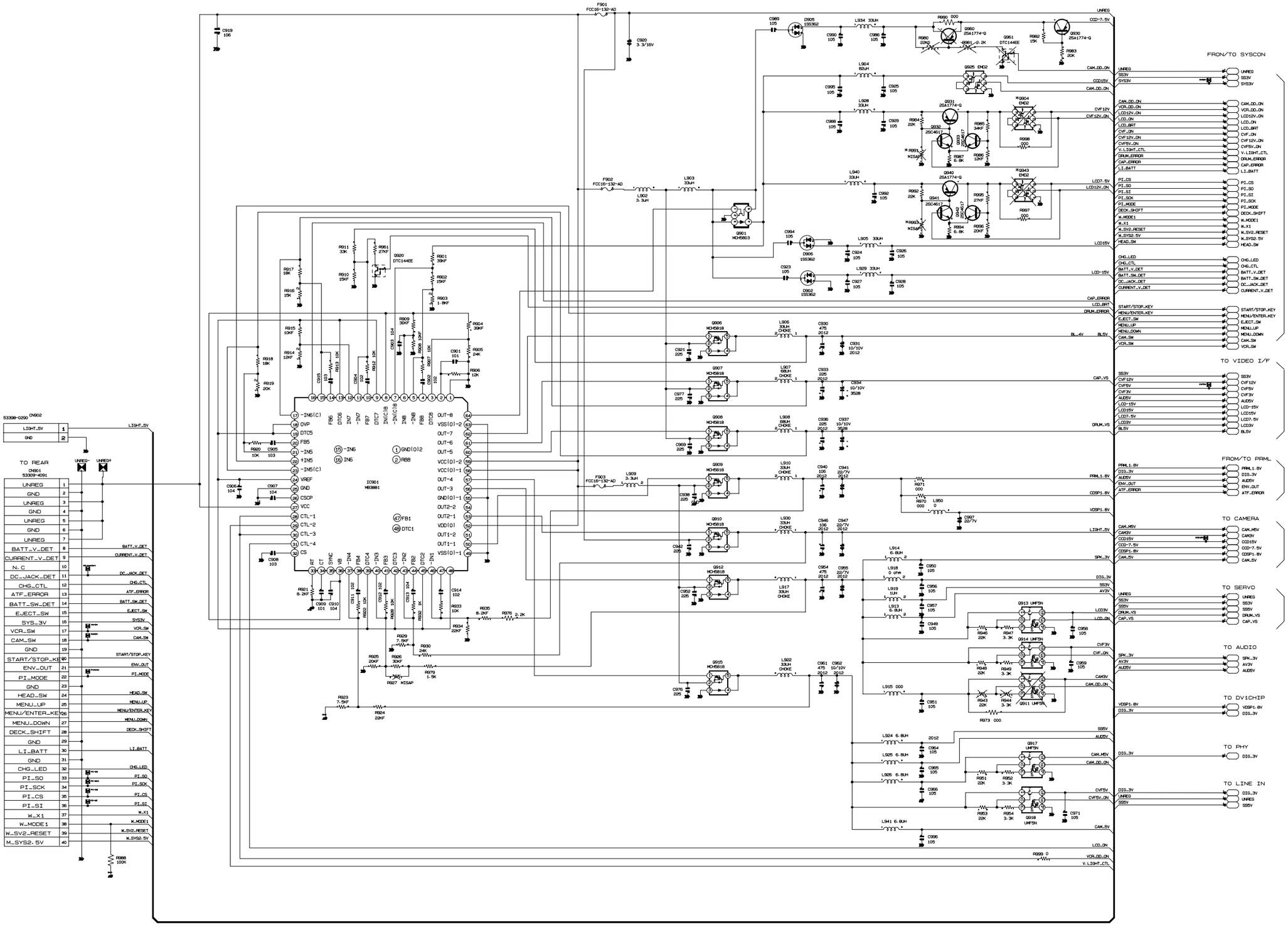
For schematic Diagram
- Resistors are in ohms, 1/8W unless otherwise noted.
- Circled numbers refer to waveforms.

Special note :
Most semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the “electrostatically sensitive (ES) devices” section of this service manual.

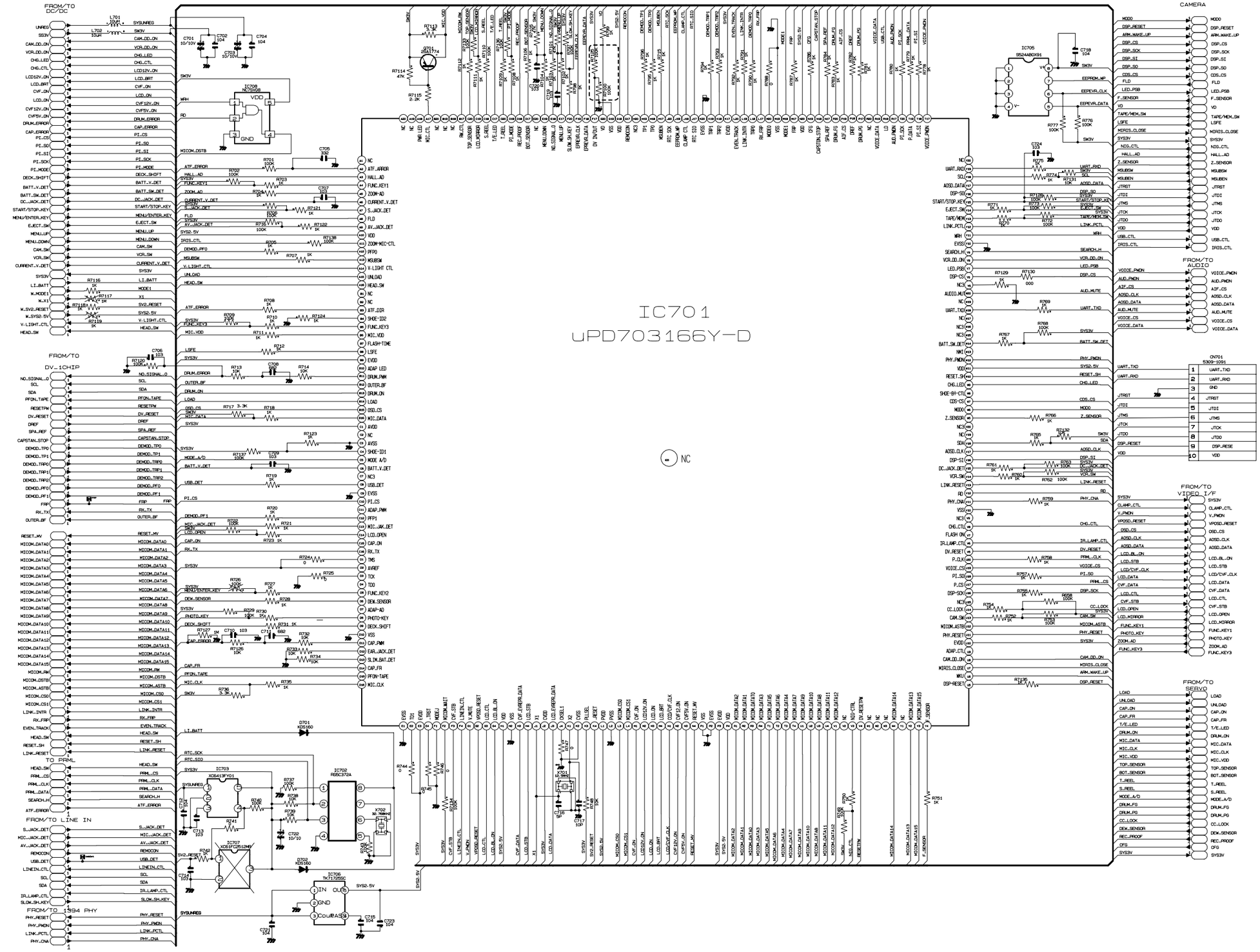
Note :
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list (may be slightly different or amended since this drawing was prepared).

Important safety notices :
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components. Use only the same type.

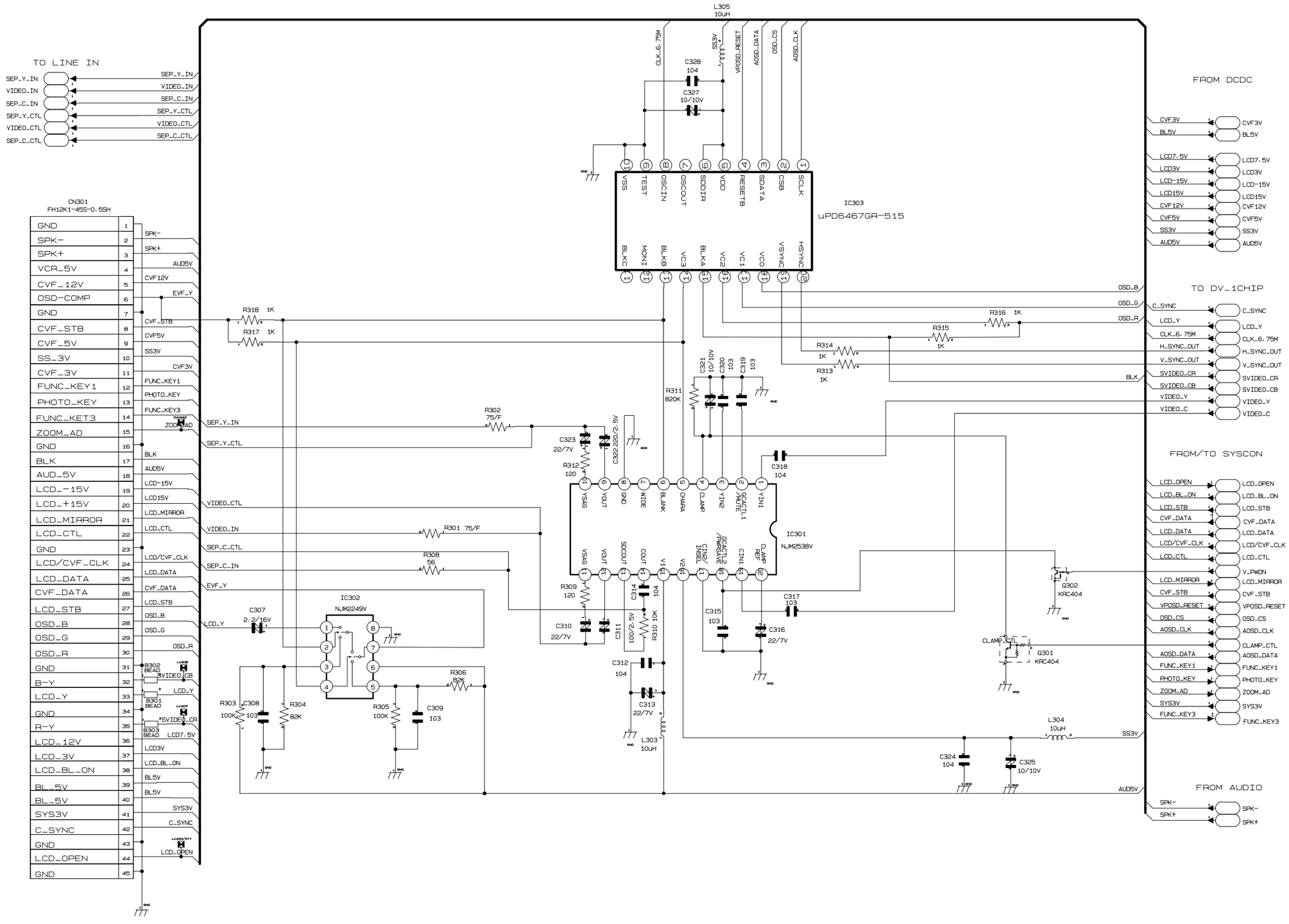
3-1 DC/DC Converter (Main)



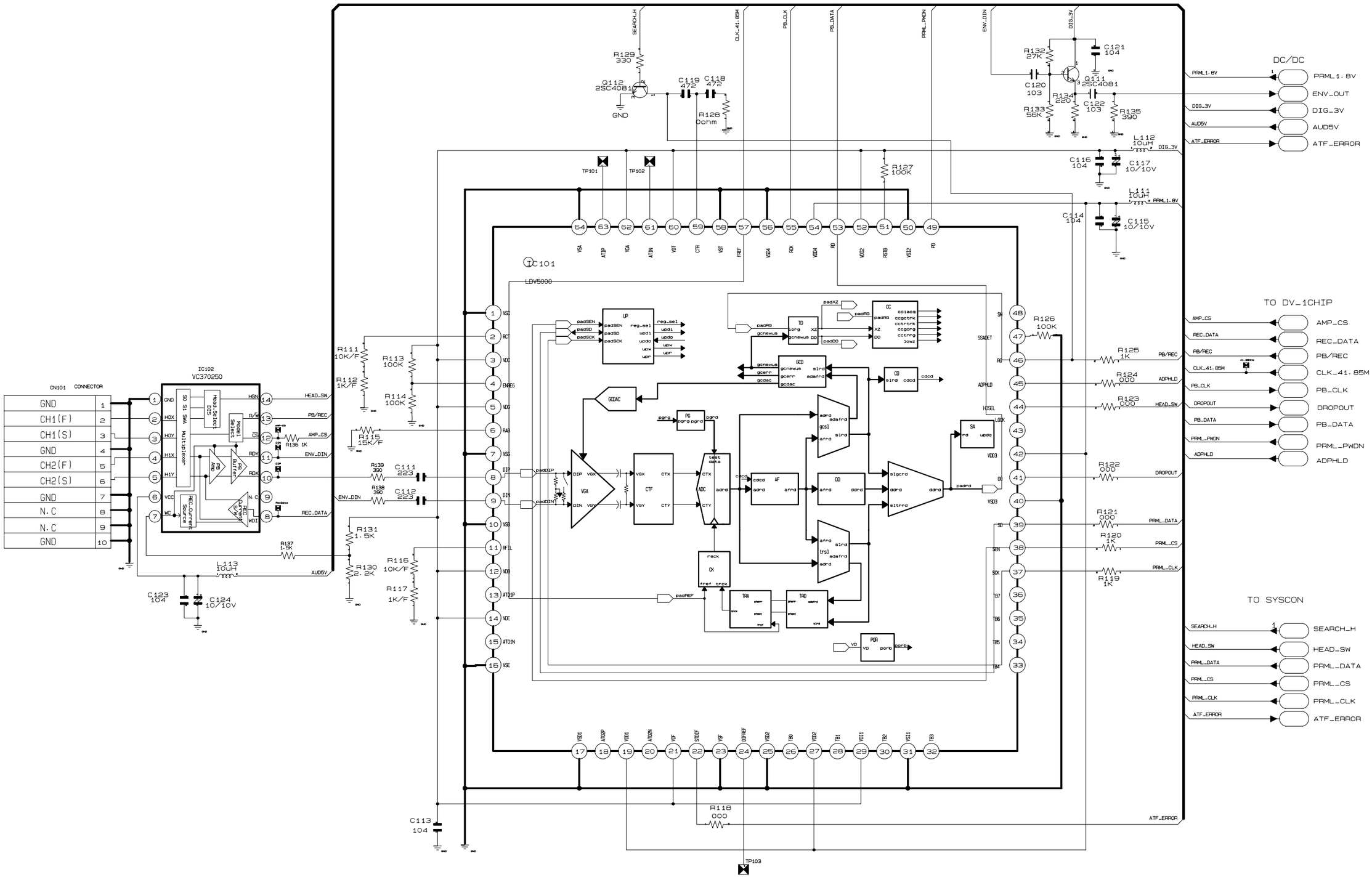
3-2 System Control (Main)



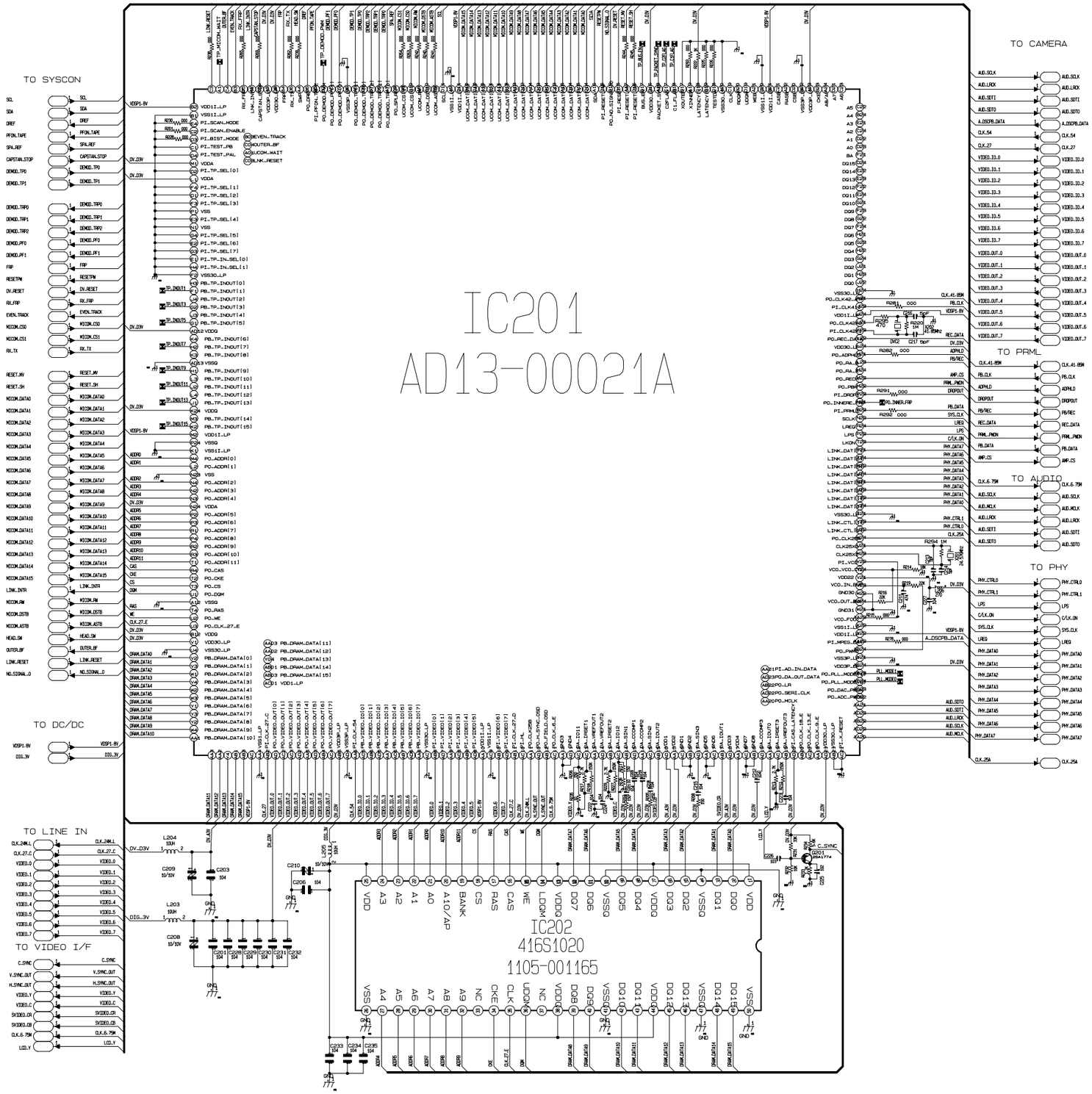
3-3 Video I/F (Main)



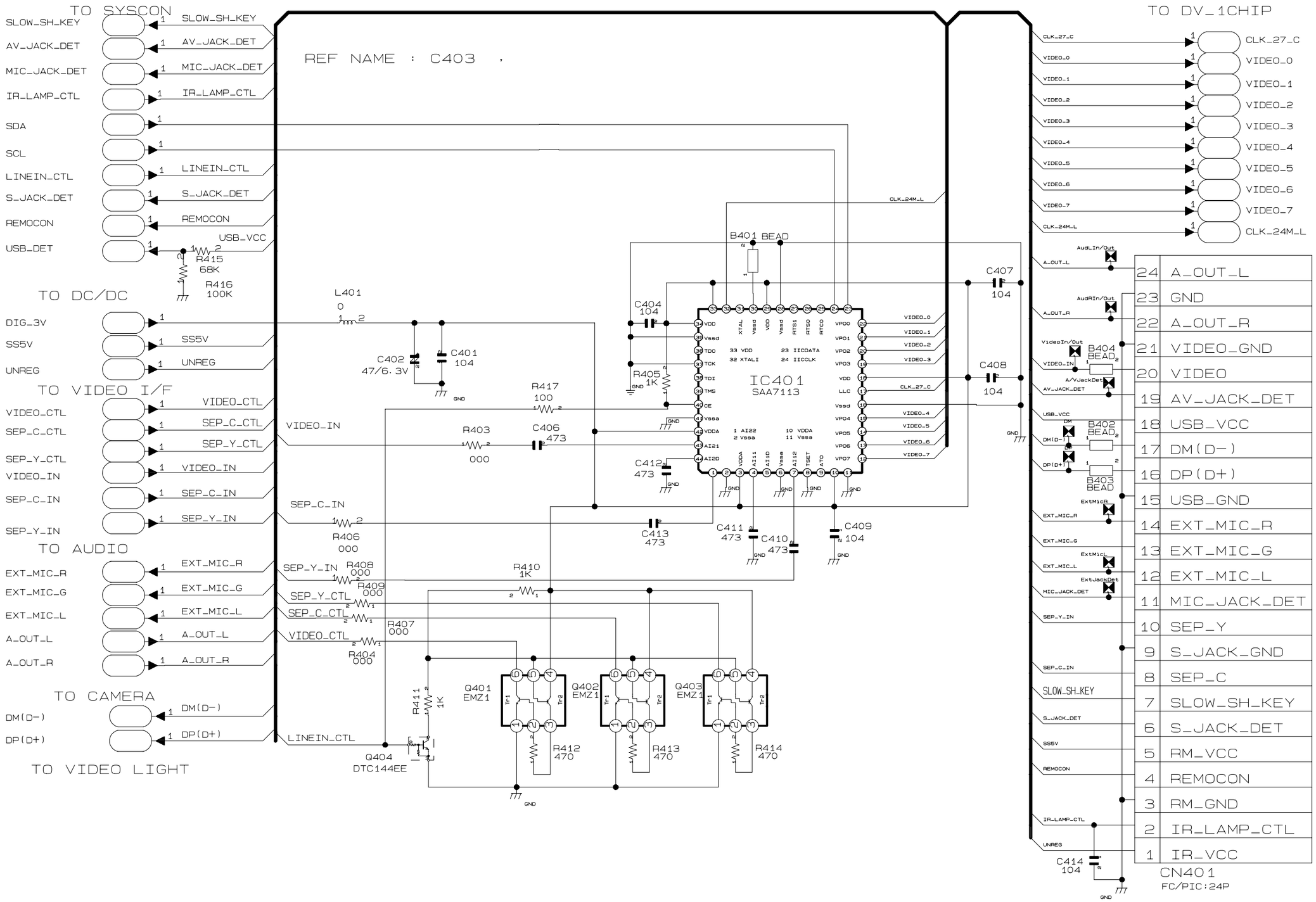
3-4 Pre-Amp PRML. (Main)



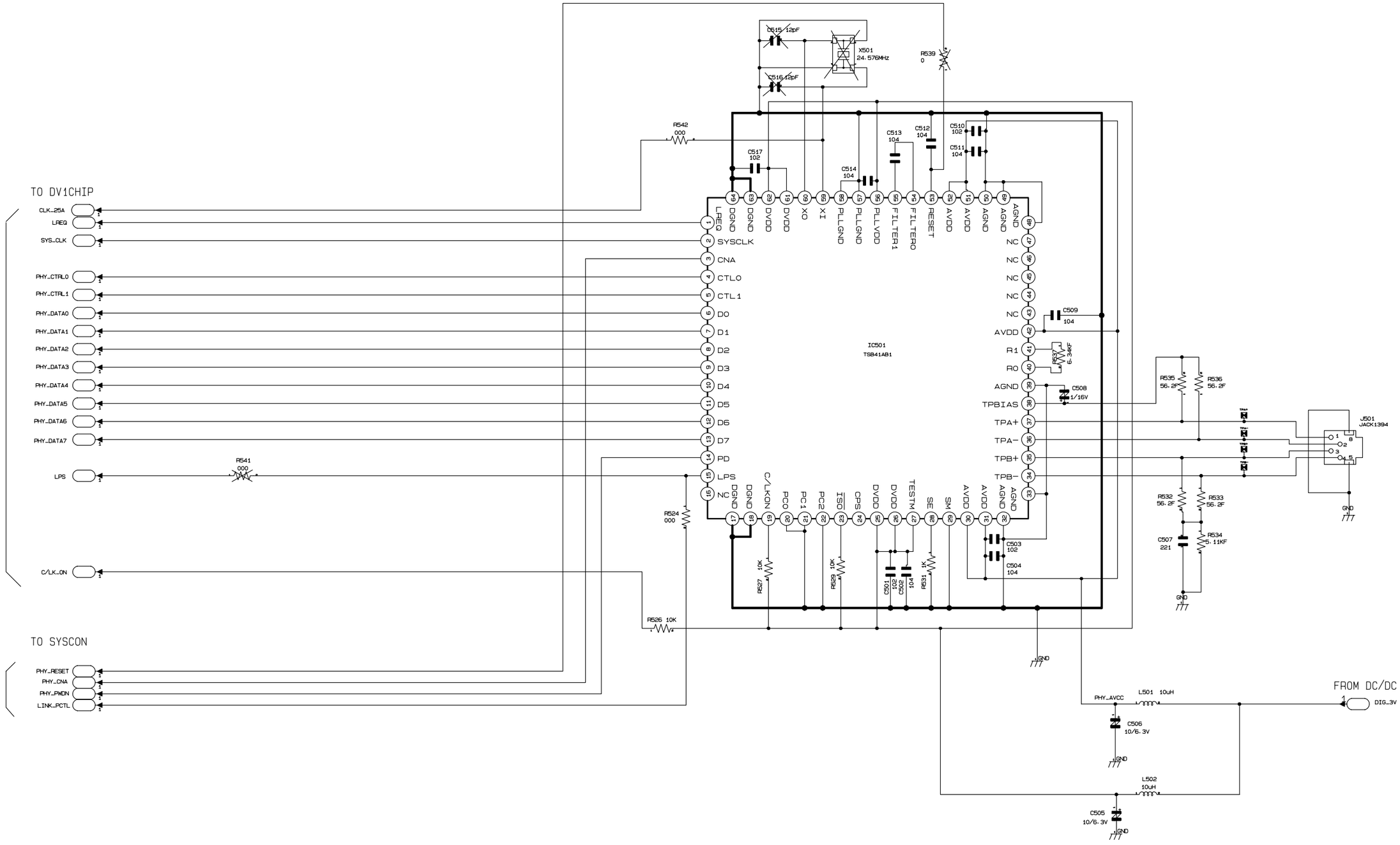
3-5 DV-1chip


IC201
AD13-00021A
TO SYSCON
TO DC/DC
TO LINE IN
TO VIDEO I/F
TO CAMERA
TO PAML
TO AUDIO
TO PHY
IC202
416S1020
1105-001165

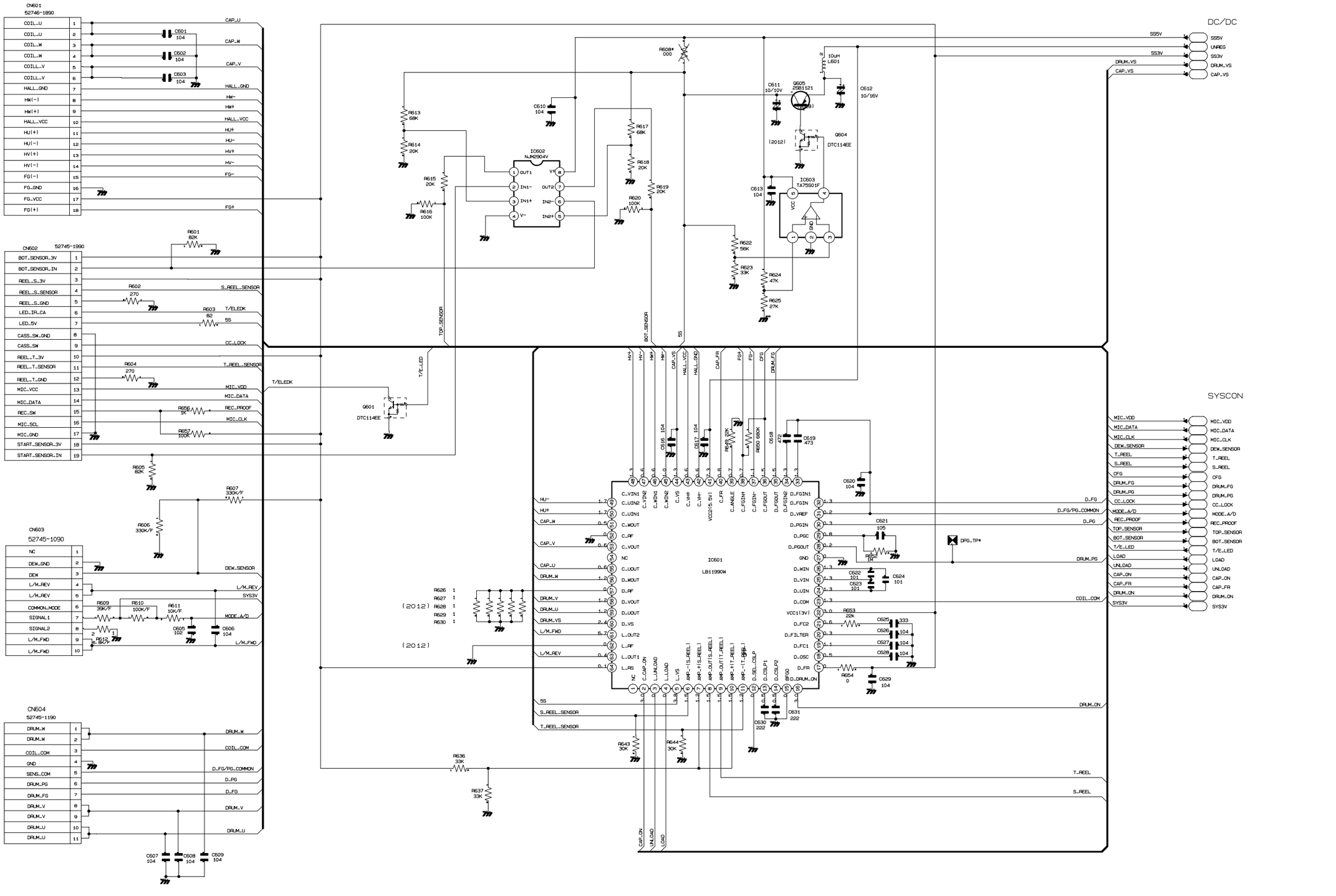
3-6 Line-In


TO SYSCON
SLOW_SH_KEY
AV_JACK_DET
MIC_JACK_DET
IR_LAMP_CTL
SDA
SCL
LINEIN_CTL
S_JACK_DET
REMOCON
USB_DET
USB_VCC
R415 68K
R416 100K
TO DC/DC
DIG_3V
SS5V
UNREG
TO VIDEO I/F
VIDEO_CTL
SEP_C_CTL
SEP_Y_CTL
VIDEO_IN
SEP_C_IN
SEP_Y_IN
TO AUDIO
EXT_MIC_R
EXT_MIC_G
EXT_MIC_L
A_OUT_L
A_OUT_R
TO CAMERA
DM(D-)
DP(D+)
TO VIDEO LIGHT
REF NAME : C403 ,
L401 0
C402 47/6.3V
C401 104
R417 100
R403 000
C406 473
R406 000
R408 000
R409 000
R407 000
R404 000
R410 1K
R411 1K
Q404 DTC144EE
Q401 EMZ1
Q402 EMZ1
Q403 EMZ1
R412 470
R413 470
R414 470
B401 BEAD
C404 104
R405 1K
IC401
SAA7113
33 VDD
32 XTALI
23 IIICDATA
24 IIICCLK
1 AI22
2 Vssa
10 VDDA
11 Vssa
C412 473
C413 473
C411 473
C410 473
C409 104
C407 104
C408 104
CLK_24M_L
VIDEO_0
VIDEO_1
VIDEO_2
VIDEO_3
VIDEO_4
VIDEO_5
VIDEO_6
VIDEO_7
TO DV_1CHIP
CLK_27_C
AudLIn/Out
A_OUT_L
AudRIn/Out
A_OUT_R
VideoIn/Out
VIDEO_IN
B404 BEAD
A/VJackDet
AV_JACK_DET
USB_VCC
DM
DM(D-)
DP(D+)
B402 BEAD
B403 BEAD
ExtMicR
EXT_MIC_R
EXT_MIC_G
ExtMicL
EXT_MIC_L
ExtJackDet
MIC_JACK_DET
SEP_Y_IN
SEP_C_IN
SLOW_SH_KEY
S_JACK_DET
SS5V
REMOCON
IR_LAMP_CTL
UNREG
C414 104
24 A_OUT_L
23 GND
22 A_OUT_R
21 VIDEO_GND
20 VIDEO
19 AV_JACK_DET
18 USB_VCC
17 DM(D-)
16 DP(D+)
15 USB_GND
14 EXT_MIC_R
13 EXT_MIC_G
12 EXT_MIC_L
11 MIC_JACK_DET
10 SEP_Y
9 S_JACK_GND
8 SEP_C
7 SLOW_SH_KEY
6 S_JACK_DET
5 RM_VCC
4 REMOCON
3 RM_GND
2 IR_LAMP_CTL
1 IR_VCC
CN401
FC/PIC:24P
GND

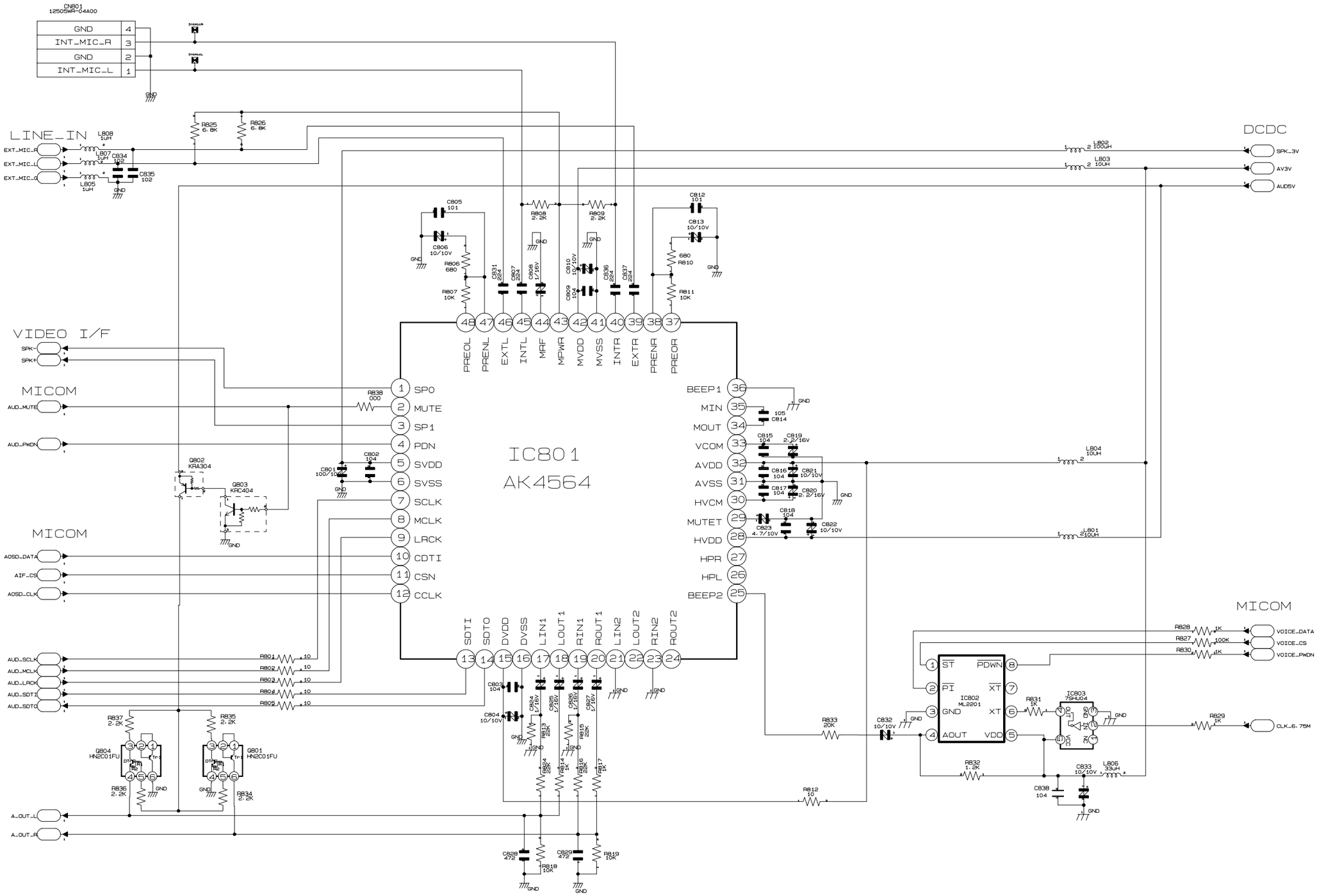
3-7 PHY (IEEE 1394)



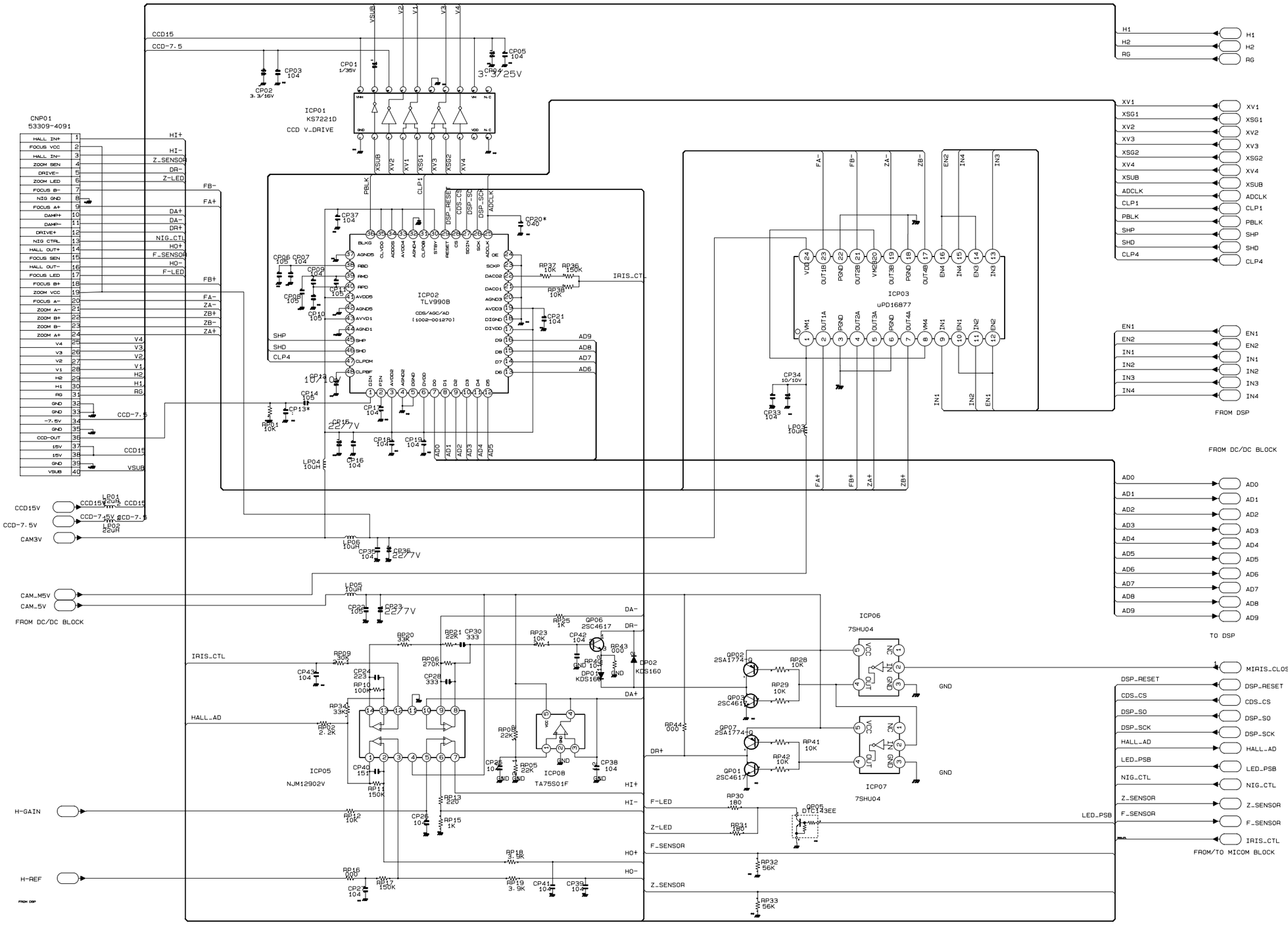
3-8 Servo


CN601
52746-1890
COIL_U
COIL_U
COIL_W
COIL_W
COILL_V
COILL_V
HALL_GND
Hw(-)
Hw(+)
HALL_VCC
HU(+)
HU(-)
HV(+)
HV(-)
FG(-)
FG_GND
FG_VCC
FG(+)
CAP_U
CAP_W
CAP_V
HALL_GND
Hw-
Hw+
HALL_VCC
HU+
HU-
HV+
HV-
FG-
FG+
C501 104
C502 104
C503 104
CN602
52745-1990
BOT_SENSOR_3V
BOT_SENSOR_IN
REEL_S_3V
REEL_S_SENSOR
REEL_S_GND
LED_IR_CA
LED_5V
CASS_SW_GND
CASS_SW
REEL_T_3V
REEL_T_SENSOR
REEL_T_GND
MIC_VCC
MIC_DATA
REC_SW
MIC_SCL
MIC_GND
START_SENSOR_3V
START_SENSOR_IN
R601 82K
R602 270
R603 82
R604 270
R605 82K
R606 330K/F
R607 330K/F
R656 1K
R657 100K
S_REEL_SENSOR
T/ELEDK
5S
CC_LOCK
T_REEL_SENSOR
MIC_VDD
MIC_DATA
REC_PROOF
MIC_CLK
CN603
52745-1090
NC
DEW_GND
DEW
L/M_REV
L/M_REV
COMMON_MODE
SIGNAL1
SIGNAL2
L/M_FWD
L/M_FWD
R609 39K/F
R610 100K/F
R611 10K/F
R612 5.6K/F
C605 102
C606 104
DEW_SENSOR
L/M_REV
SYS3V
MODE_A/D
L/M_FWD
CN604
52745-1190
DRUM_W
DRUM_W
COIL_COM
GND
SENS_COM
DRUM_PG
DRUM_FG
DRUM_V
DRUM_V
DRUM_U
DRUM_U
C507 104
C508 104
C509 104
D_FG/PG_COMMON
D_PG
D_FG
DRUM_V
DRUM_U
R608* 000
C510 104
R613 68K
R614 20K
R615 20K
R616 100K
IC602
NJM2904V
OUT1
IN1-
IN1+
V-
V+
OUT2
IN2-
IN2+
R617 68K
R618 20K
R619 20K
R620 100K
C611 10/10V
Q605 2SB1121
L601 10UH
C612 10/16V
Q604 DTC114EE
(2012)
IC603 TA75S01F
VCC
GND
C613 104
R622 56K
R623 33K
R624 47K
R625 27K
DC/DC
SS5V
UNREG
SS3V
DRUM_VS
CAP_VS
R626 1
R627 1
R628 1
R629 1
R630 1
(2012)
(2012)
Q601 DTC114EE
T/ELEDK
T/E_LED
TOP_SENSOR
BOT_SENSOR
5S
IC601
LB11990W
HU-
HU+
CAP_W
CAP_V
CAP_U
DRUM_W
DRUM_V
DRUM_U
DRUM_VS
L/M_FWD
L/M_REV
5S
S_REEL_SENSOR
T_REEL_SENSOR
C_VIN1
C_UIN0
C_UIN1
C_WOUT
C_RF
C_VOUT
NC
C_UOUT
D_WOUT
D_RF
D_VOUT
D_UOUT
D_VS
L_OUT2
L_RF
L_OUT1
L_RS
C_FIN2
C_MIN1
C_MIN2
C_VS
C_HH
C_VH
VCC2(5.5V)
C_FR
C_ANGLE
C_FGIN+
C_FGIN-
C_FGOUT
D_FGOUT
D_FGND
D_FGIN1
D_FGIN
D_VREF
D_PGIN
D_PGC
D_PGOUT
GND
D_WIN
D_VIN
D_UIN
D_COM
VCC1(3V)
D_FC2
D_FILTER
D_FC1
D_OSC
D_FR
BPD
NC
C_CAP_ON
L_LOAD
L_UNLOAD
L_VS
AMP_-I(S_REEL)
AMP_+I(S_REEL)
AMP_OUT(S_REEL)
AMP_OUT(T_REEL)
AMP_+I(T_REEL)
AMP_-I(T_REEL)
D_SEL_CSLP
D_CSLP1
D_CSLP2
BPD_DRUM_ON
C615 104
C616 104
C617 104
C618 472
C619 473
R649 22K
R650 680K
C620 104
C621 105
R652 1K
C622 101
C623 101
C624 101
R653 22K
C625 333
C626 104
C627 104
C628 104
R654 0
C629 104
C630 222
C631 222
R643 30K
R644 30K
R636 33K
R637 33K
DPG_TP*
D_FG
D_FG/PG_COMMON
D_PG
DRUM_PG
COIL_COM
DRUM_ON
T_REEL
S_REEL
CAP_ON
UNLOAD
LOAD
SYSCON
MIC_VDD
MIC_DATA
MIC_CLK
DEW_SENSOR
T_REEL
S_REEL
CFG
DRUM_FG
DRUM_PG
CC_LOCK
MODE_A/D
REC_PROOF
TOP_SENSOR
BOT_SENSOR
T/E_LED
LOAD
UNLOAD
CAP_ON
CAP_FR
DRUM_ON
SYS3V

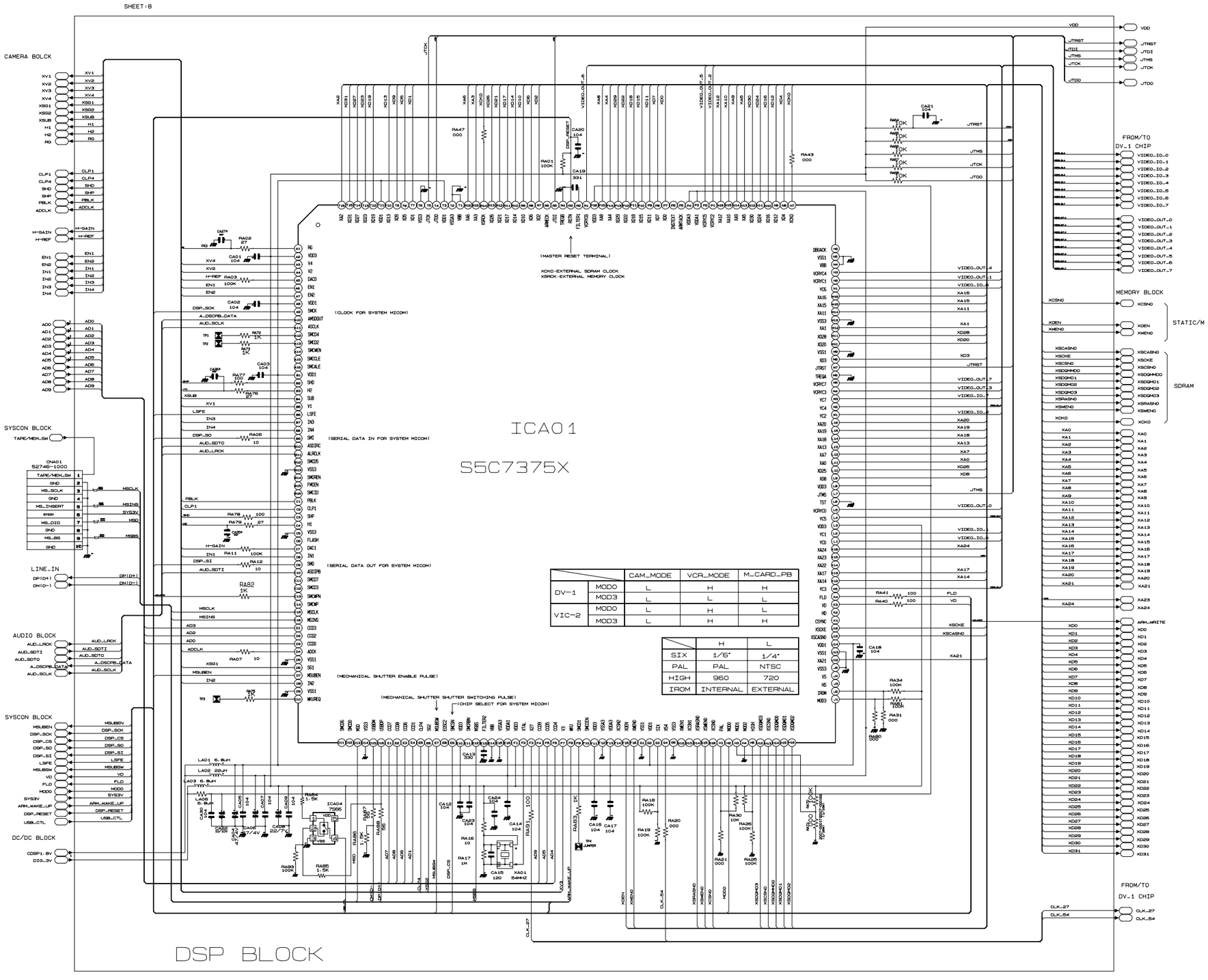
3-9 Audio


CN801
12505WR-04A00
GND
INT_MIC_R
GND
INT_MIC_L
LINE_IN
EXT_MIC_R
EXT_MIC_L
EXT_MIC_G
L808 1uH
L807 1uH
L805 1uH
C834 102
C835 102
R825 6.8K
R826 6.8K
DCDC
SPK_3V
AV3V
AUD5V
L802 100uH
L803 10uH
L804 10uH
L801 10uH
C805 101
C806 10/10V
R805 680
R807 10K
R808 2.2K
R809 2.2K
C812 101
C813 10/10V
R810 680
R811 10K
C821 224
C807 224
C808 1/16V
C810 10/10V
C809 104
C836 224
C837 224
VIDEO I/F
SPK-
SPK+
MICOM
AUD_MUTE
AUD_PWDN
Q802 KRA304
Q803 KRC404
C801 100/10V
C802 104
IC801
AK4564
SP0
MUTE
SP1
PDN
SVDD
SVSS
SCLK
MCLK
LRCK
CDTI
CSN
CCLK
BEEP1
MIN
MOUT
VCOM
AVDD
AVSS
HVCM
MUTET
HVDD
HPR
HPL
BEEP2
C814 105
C815 104
C819 2.2/16V
C816 104
C821 10/10V
C817 104
C820 2.2/16V
C818 104
C823 4.7/10V
C822 10/10V
R838 000
MICOM
AOSD_DATA
AIF_CS
AOSD_CLK
AUD_SCLK
AUD_MCLK
AUD_LRCK
AUD_SDTI
AUD_SDTO
R801 10
R802 10
R803 10
R804 10
R805 10
C803 104
C804 10/10V
C824 1/16V
C825 1/16V
C826 1/16V
C827 1/16V
R813 22K
R815 22K
R824 22K
R816 22K
R814 1K
R817 1K
R837 2.2K
R835 2.2K
Q804 HN2C01FU
Q801 HN2C01FU
R836 2.2K
R834 2.2K
A_OUT_L
A_OUT_R
C828 472
C829 472
R818 10K
R819 10K
R812 10
R833 20K
C832 10/10V
IC802 ML2201
ST
PI
GND
AOUT
PDWN
XT
XT
VDD
R831 1K
IC803 7SHU04
R832 1.2K
C833 10/10V
L806 33uH
C838 104
MICOM
R828 1K
R827 100K
R830 1K
VOICE_DATA
VOICE_CS
VOICE_PWDN
R829 1K
CLK_6.75M

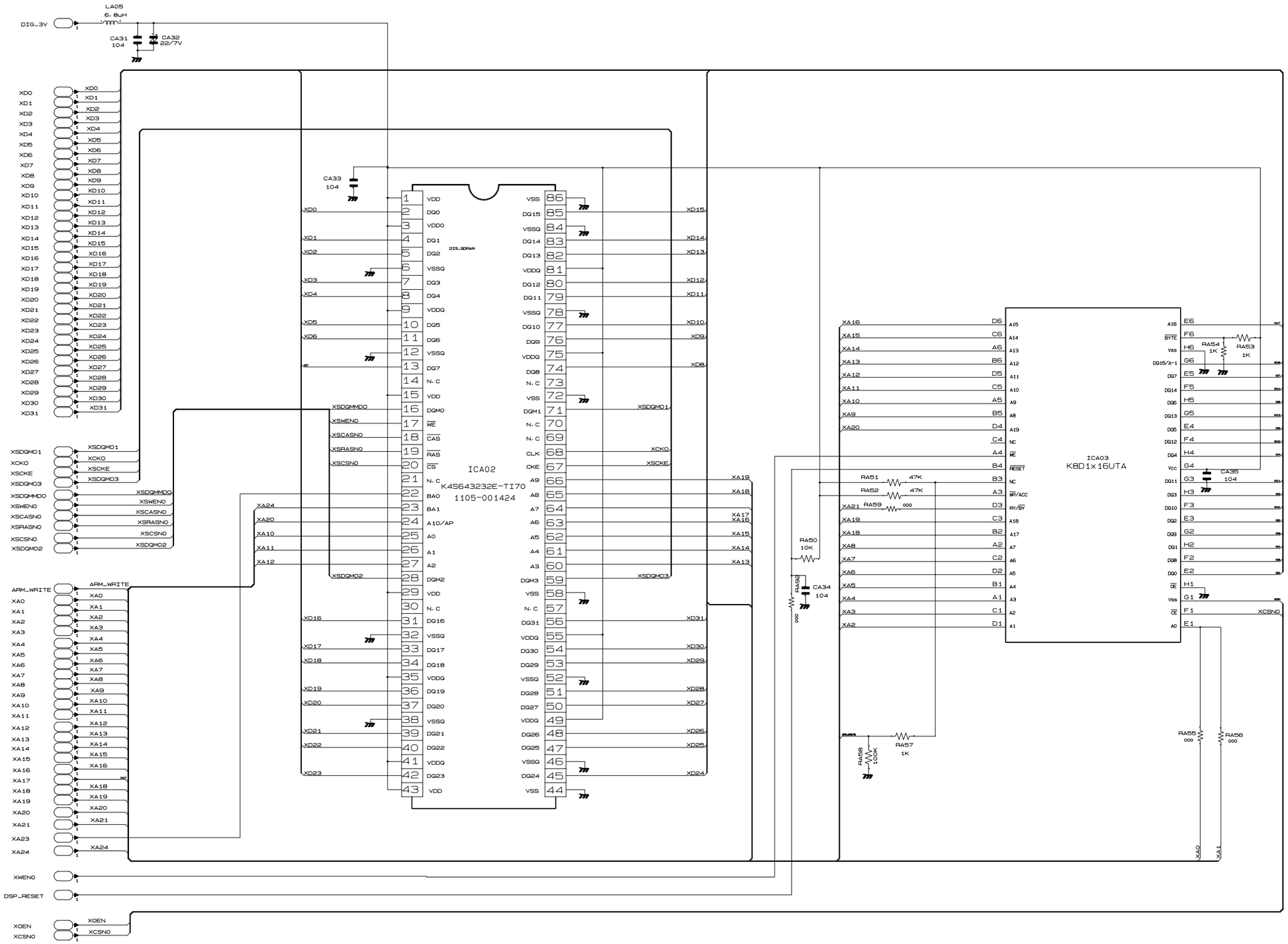
3-10 Camera Process



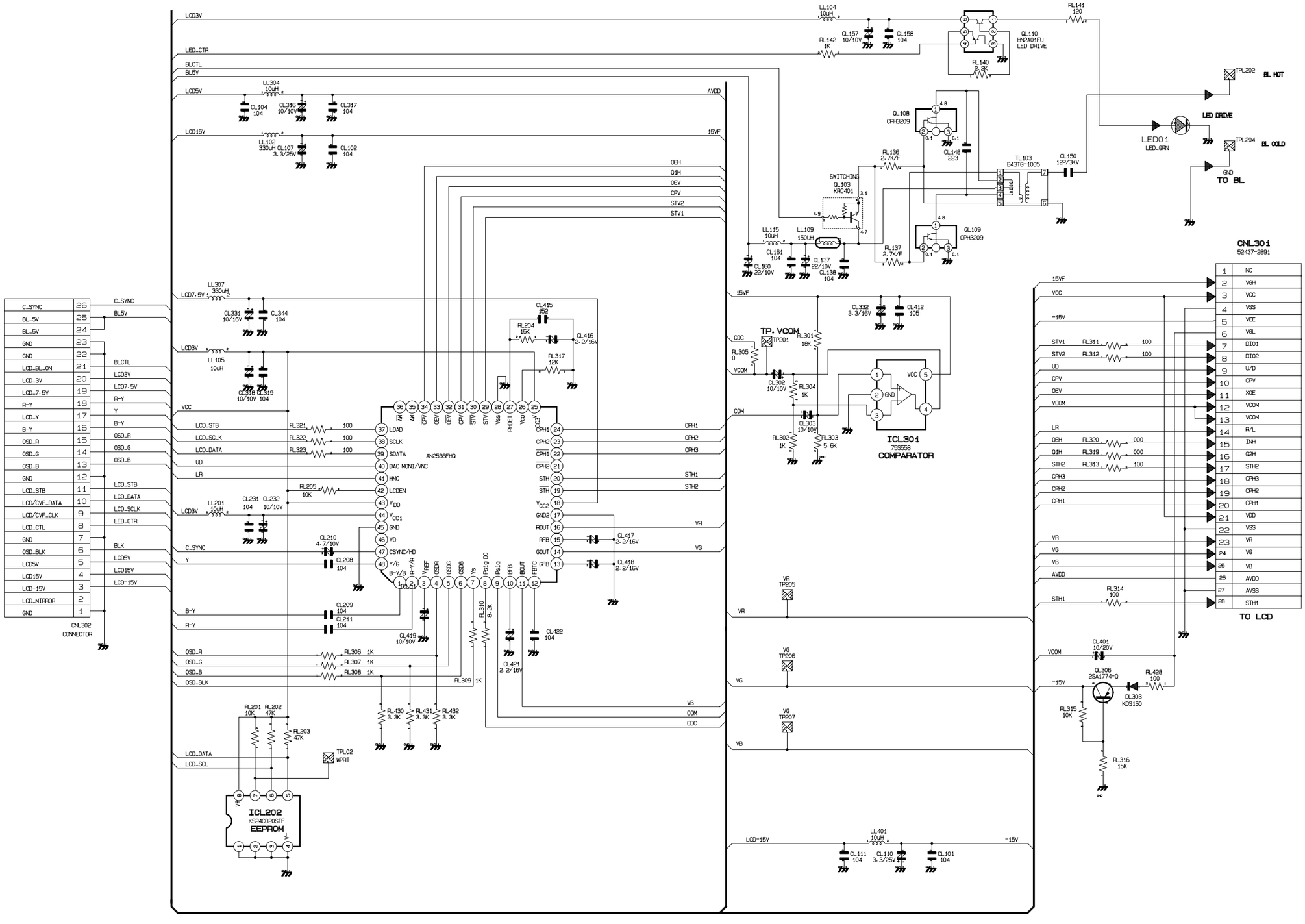
3-11 Camera DSP



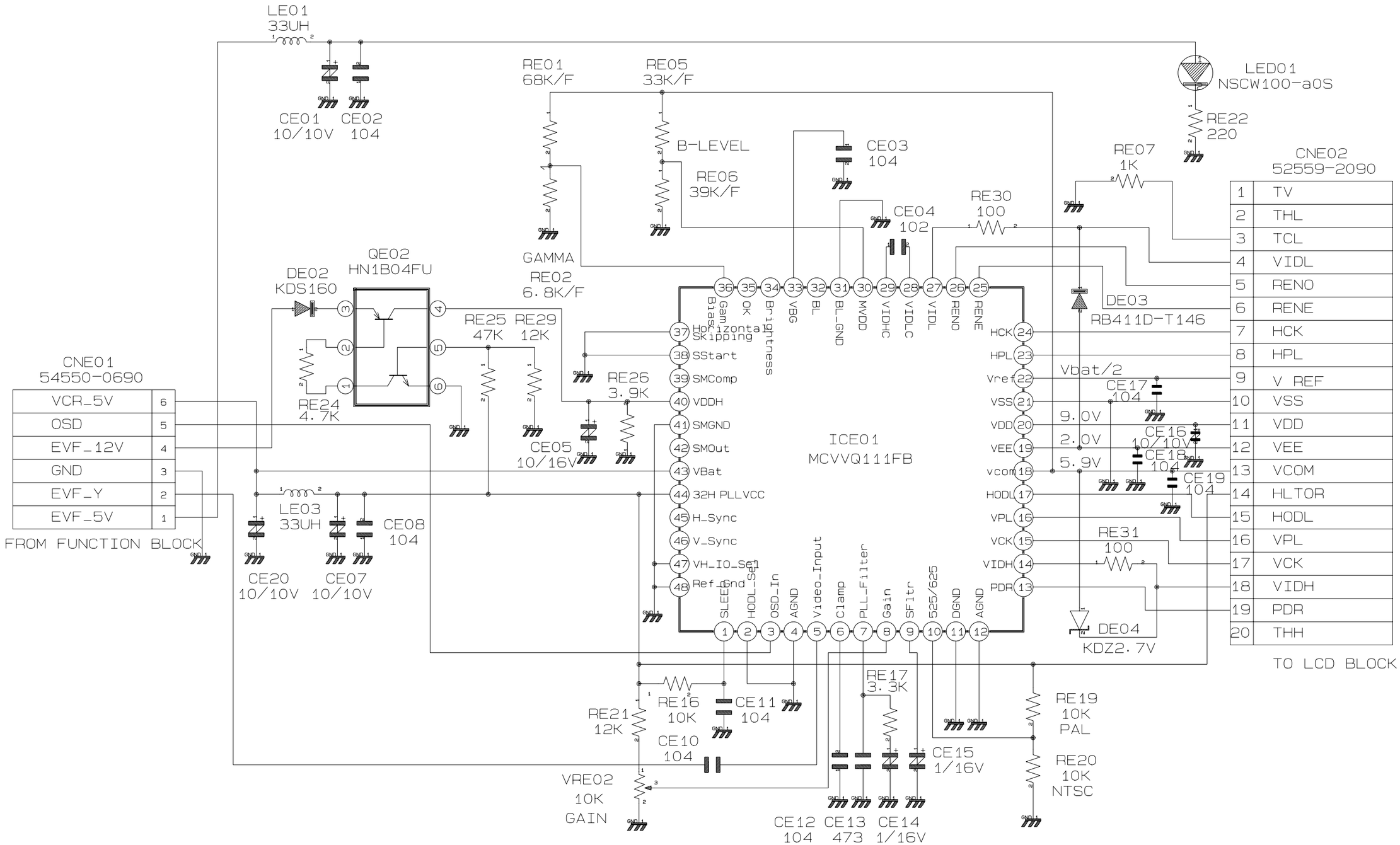
3-12 Camera Memory Block



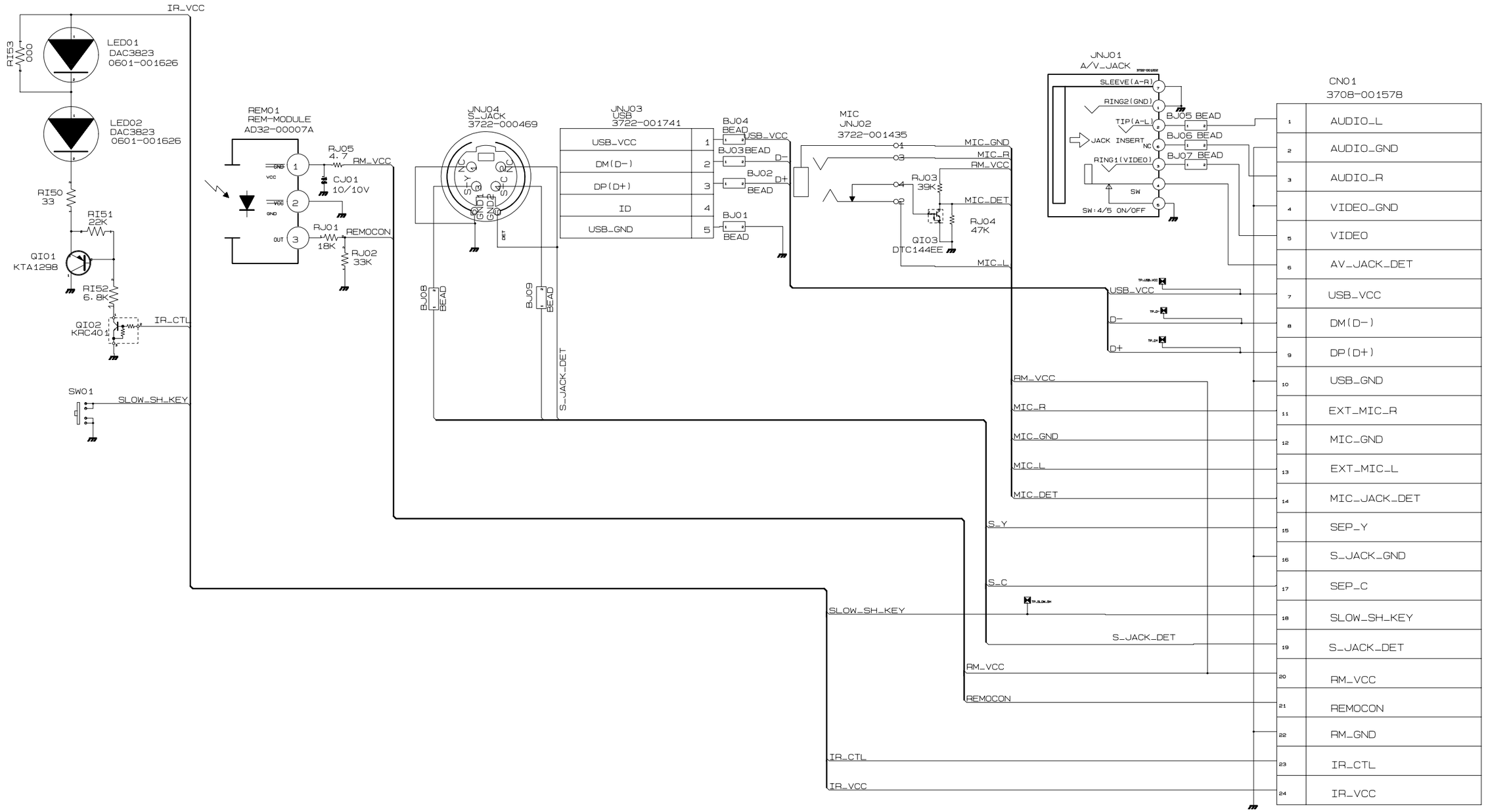
3-13 LCD


CNL302
CONNECTOR
C_SYNC
BL_5V
GND
LCD_BL_ON
LCD_3V
LCD_7.5V
R-Y
LCD_Y
B-Y
OSD_R
OSD_G
OSD_B
LCD_MIRROR
LCD_CTL
LCD/CVF_DATA
LCD/CVF_CLK
LED_CTR
BLK
LCD5V
LCD15V
LCD-15V
AN2536FHQ
LOAD
SCLK
SDATA
DAC MONI/VNC
HMC
LCDEN
CSYNC/HD
Y/G
B-Y/B
R-Y/R
ICL202
KS24002OSTF
EEPROM
TP202
BL HOT
LED DRIVE
LEDO1
LED_GRN
TP204
BL COLD
GND
TO BL
QL110
HN2A01FU
LED DRIVE
QL108
CPH3209
QL109
CPH3209
QL103
KRC401
SWITCHING
TL103
B43TG-1005
TP. VCOM
TP201
ICL301
75S558
COMPARATOR
CNL301
52437-2891
NC
VGH
VCC
VSS
VEE
VGL
DIO1
DIO2
U/D
CPV
XOE
VCOM
R/L
INH
G2H
STH2
CPH3
CPH2
CPH1
VDD
VSS
VR
VG
VB
AVDD
AVSS
STH1
TO LCD
TP02
WPRT
TP205
TP206
TP207

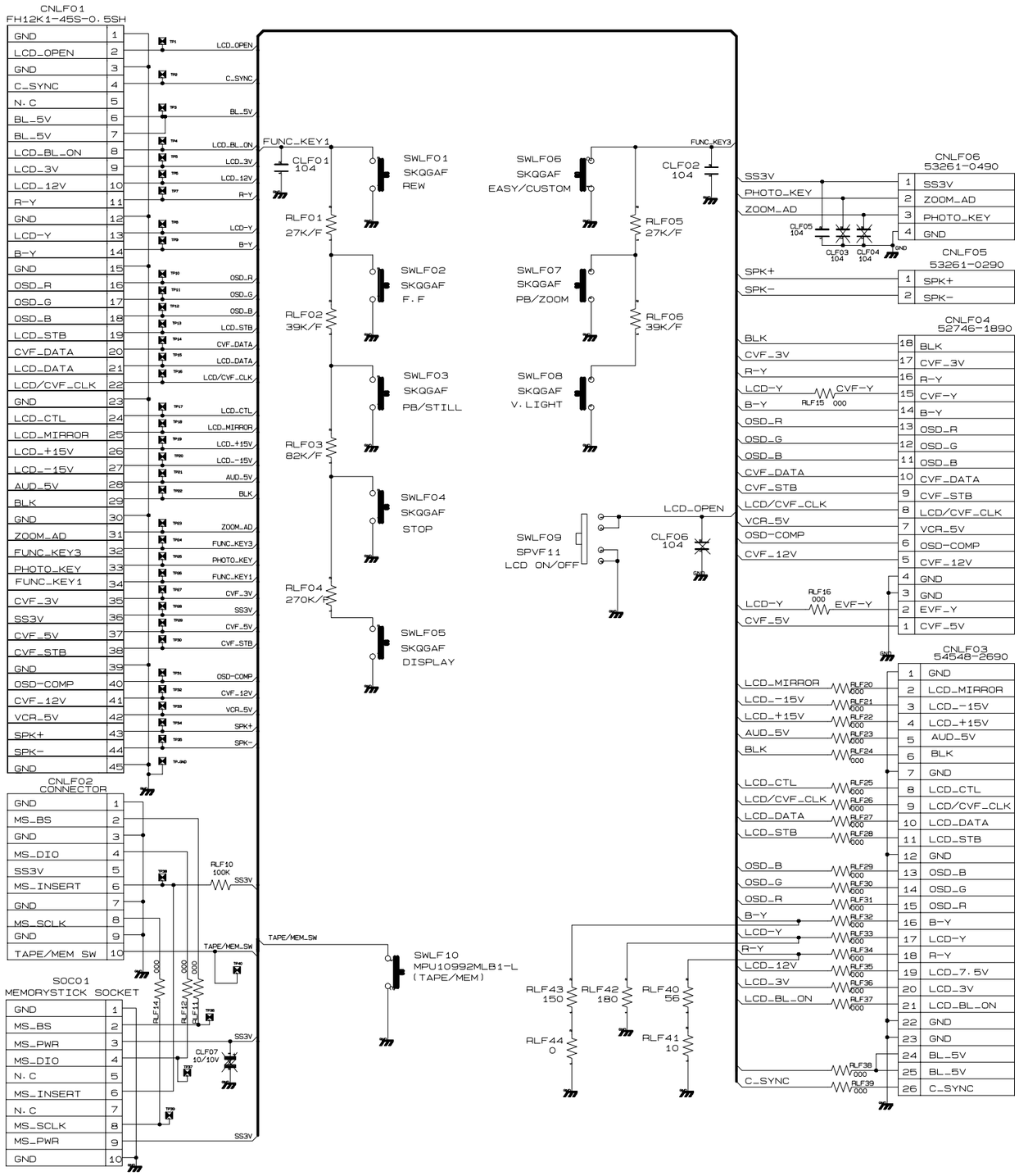
3-14 EVF


LE01
33UH
CE01
10/10V
CE02
104
RE01
68K/F
RE05
33K/F
B-LEVEL
RE06
39K/F
CE03
104
CE04
102
RE30
100
LED01
NSCW100-a0S
RE22
220
RE07
1K
CNE02
52559-2090
GAMMA
RE02
6.8K/F
QE02
HN1B04FU
DE02
KDS160
RE25
47K
RE29
12K
RE24
4.7K
CE05
10/16V
RE26
3.9K
DE03
RB411D-T146
Vbat/2
CE17
104
9.0V
2.0V
5.9V
CE16
10/10V
CE18
104
CE19
104
DE04
KDZ2.7V
RE31
100
CNE01
54550-0690
VCR_5V 6
OSD 5
EVF_12V 4
GND 3
EVF_Y 2
EVF_5V 1
FROM FUNCTION BLOCK
LE03
33UH
CE08
104
CE20
10/10V
CE07
10/10V
ICE01
MCVVQ111FB
Horizontal Skipping
SStart
SMComp
VDDH
SMGND
SMOut
VBat
32H PLLVCC
H_Sync
V_Sync
VH_IO_Set
Ref_Gnd
Gamma Bias
OK
Brightness
VBG
BL
BL_GND
MVDD
VIDHC
VIDLC
VIDL
RENO
RENE
HCK
HPL
Vref
VSS
VDD
VEE
vcom
HODL
VPL
VCK
VIDH
PDR
SLEEP
HODL_Sel
OSD_In
AGND
Video_Input
Clamp
PLL_Filter
Gain
SFltr
525/625
DGND
AGND
RE21
12K
RE16
10K
CE11
104
CE10
104
VRE02
10K
GAIN
RE17
3.3K
CE15
1/16V
CE12
104
CE13
473
CE14
1/16V
RE19
10K
PAL
RE20
10K
NTSC
1 TV
2 THL
3 TCL
4 VIDL
5 RENO
6 RENE
7 HCK
8 HPL
9 V_REF
10 VSS
11 VDD
12 VEE
13 VCOM
14 HLTOR
15 HODL
16 VPL
17 VCK
18 VIDH
19 PDR
20 THH
TO LCD BLOCK

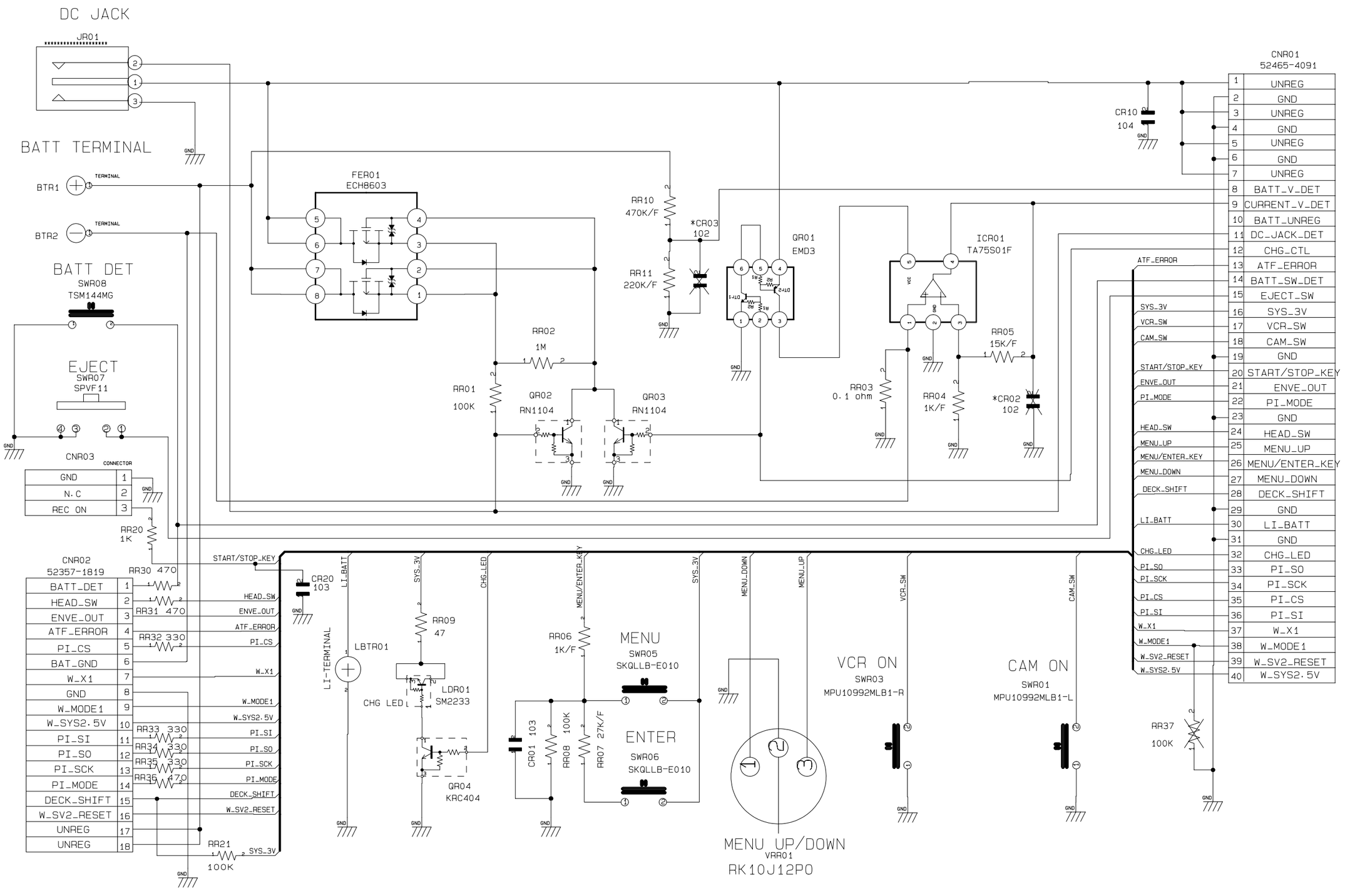
3-15 Front


IR_VCC
RI53 000
LED01 DAC3823 0601-001626
LED02 DAC3823 0601-001626
RI50 33
RI51 22K
QI01 KTA1298
RI52 6.8K
QI02 KRC401
IR_CTL
SW01
SLOW_SH_KEY
REM01 REM-MODULE AD32-00007A
RJ05 4.7
RM_VCC
CJ01 10/10V
RJ01 18K
REMOCON
RJ02 33K
JNJ04 S_JACK 3722-000469
JNJ03 USB 3722-001741
USB_VCC
DM(D-)
DP(D+)
ID
USB_GND
BJ04 BEAD
BJ03 BEAD
BJ02 BEAD
BJ01 BEAD
BJ08 BEAD
BJ09 BEAD
S_JACK_DET
MIC JNJ02 3722-001435
MIC_GND
MIC_R
RM_VCC
RJ03 39K
MIC_DET
RJ04 47K
QI03 DTC144EE
MIC_L
JNJ01 A/V_JACK
SLEEVE(A-R)
RING2(GND)
TIP(A-L)
JACK INSERT
RING1(VIDEO)
SW
SW:4/5 ON/OFF
BJ05 BEAD
BJ06 BEAD
BJ07 BEAD
CN01 3708-001578
1 AUDIO_L
2 AUDIO_GND
3 AUDIO_R
4 VIDEO_GND
5 VIDEO
6 AV_JACK_DET
7 USB_VCC
8 DM(D-)
9 DP(D+)
10 USB_GND
11 EXT_MIC_R
12 MIC_GND
13 EXT_MIC_L
14 MIC_JACK_DET
15 SEP_Y
16 S_JACK_GND
17 SEP_C
18 SLOW_SH_KEY
19 S_JACK_DET
20 RM_VCC
21 REMOCON
22 RM_GND
23 IR_CTL
24 IR_VCC

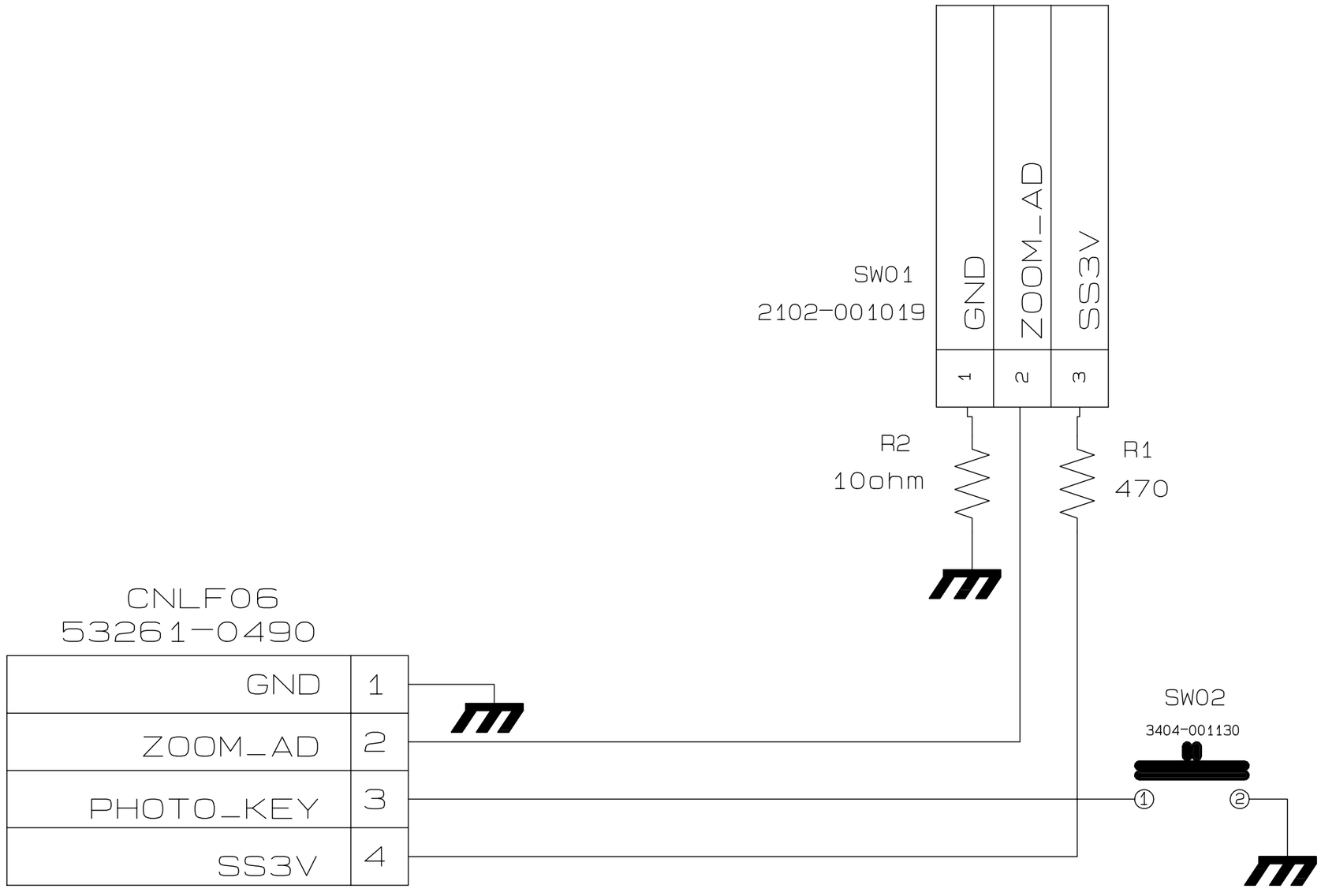
3-16 Left


CNLF01
FH12K1-45S-0.5SH
GND 1
LCD_OPEN 2
GND 3
C_SYNC 4
N.C 5
BL_5V 6
BL_5V 7
LCD_BL_ON 8
LCD_3V 9
LCD_12V 10
R-Y 11
GND 12
LCD-Y 13
B-Y 14
GND 15
OSD_R 16
OSD_G 17
OSD_B 18
LCD_STB 19
CVF_DATA 20
LCD_DATA 21
LCD/CVF_CLK 22
GND 23
LCD_CTL 24
LCD_MIRROR 25
LCD_+15V 26
LCD_-15V 27
AUD_5V 28
BLK 29
GND 30
ZOOM_AD 31
FUNC_KEY3 32
PHOTO_KEY 33
FUNC_KEY1 34
CVF_3V 35
SS3V 36
CVF_5V 37
CVF_STB 38
GND 39
OSD-COMP 40
CVF_12V 41
VCR_5V 42
SPK+ 43
SPK- 44
GND 45
CNLF02
CONNECTOR
GND 1
MS_BS 2
GND 3
MS_DIO 4
SS3V 5
MS_INSERT 6
GND 7
MS_SCLK 8
GND 9
TAPE/MEM SW 10
SOC01
MEMORYSTICK SOCKET
GND 1
MS_BS 2
MS_PWR 3
MS_DIO 4
N.C 5
MS_INSERT 6
N.C 7
MS_SCLK 8
MS_PWR 9
GND 10
FUNC_KEY1
CLF01 104
SWLF01 SKQGAF REW
RLF01 27K/F
SWLF02 SKQGAF F.F
RLF02 39K/F
SWLF03 SKQGAF PB/STILL
RLF03 82K/F
SWLF04 SKQGAF STOP
RLF04 270K/F
SWLF05 SKQGAF DISPLAY
RLF10 100K
SS3V
TAPE/MEM_SW
SWLF10 MPU10992MLB1-L (TAPE/MEM)
RLF14 000
RLF12 000
RLF11 000
CLF07 10/10V
SS3V
SWLF06 SKQGAF EASY/CUSTOM
FUNC_KEY3
CLF02 104
RLF05 27K/F
SWLF07 SKQGAF PB/ZOOM
RLF06 39K/F
SWLF08 SKQGAF V.LIGHT
SWLF09 SPVF11 LCD ON/OFF
LCD_OPEN
CLF06 104
RLF43 150
RLF42 180
RLF40 56
RLF44 0
RLF41 10
SS3V
PHOTO_KEY
ZOOM_AD
CLF05 104
CLF03 104
CLF04 104
CNLF06
53261-0490
1 SS3V
2 ZOOM_AD
3 PHOTO_KEY
4 GND
SPK+
SPK-
CNLF05
53261-0290
1 SPK+
2 SPK-
CNLF04
52746-1890
18 BLK
17 CVF_3V
16 R-Y
15 CVF-Y
14 B-Y
13 OSD_R
12 OSD_G
11 OSD_B
10 CVF_DATA
9 CVF_STB
8 LCD/CVF_CLK
7 VCR_5V
6 OSD-COMP
5 CVF_12V
4 GND
3 GND
2 EVF_Y
1 CVF_5V
RLF15 000
RLF16 000
CNLF03
54548-2690
1 GND
2 LCD_MIRROR
3 LCD_-15V
4 LCD_+15V
5 AUD_5V
6 BLK
7 GND
8 LCD_CTL
9 LCD/CVF_CLK
10 LCD_DATA
11 LCD_STB
12 GND
13 OSD_B
14 OSD_G
15 OSD_R
16 B-Y
17 LCD-Y
18 R-Y
19 LCD_7.5V
20 LCD_3V
21 LCD_BL_ON
22 GND
23 GND
24 BL_5V
25 BL_5V
26 C_SYNC
RLF20 000
RLF21 000
RLF22 000
RLF23 000
RLF24 000
RLF25 000
RLF26 000
RLF27 000
RLF28 000
RLF29 000
RLF30 000
RLF31 000
RLF32 000
RLF33 000
RLF34 000
RLF35 000
RLF36 000
RLF37 000
RLF38 000
RLF39 000

3-17 Rear


DC JACK
JR01
BATT TERMINAL
BTR1
TERMINAL
BTR2
TERMINAL
BATT DET
SWR08
TSM144MG
EJECT
SWR07
SPVF11
CNR03
CONNECTOR
GND
N.C
REC ON
RR20
1K
CNR02
52357-1819
BATT_DET
HEAD_SW
ENVE_OUT
ATF_ERROR
PI_CS
BAT_GND
W_X1
GND
W_MODE1
W_SYS2.5V
PI_SI
PI_SO
PI_SCK
PI_MODE
DECK_SHIFT
W_SV2_RESET
UNREG
UNREG
RR30 470
RR31 470
RR32 330
RR33 330
RR34 330
RR35 330
RR36 470
RR21
100K
SYS_3V
FER01
ECH8603
RR10
470K/F
*CR03
102
RR11
220K/F
QR01
EMD3
RR02
1M
RR01
100K
QR02
RN1104
QR03
RN1104
ICR01
TA75S01F
RR05
15K/F
RR03
0.1 ohm
RR04
1K/F
*CR02
102
CR10
104
CR20
103
LBTR01
LI-TERMINAL
LDR01
SM2233
CHG LED
QR04
KRC404
RR09
47
RR06
1K/F
MENU
SWR05
SKQLLB-E010
ENTER
SWR06
SKQLLB-E010
CR01 103
RR08 100K
RR07 27K/F
MENU UP/DOWN
VRR01
RK10J12P0
VCR ON
SWR03
MPU10992MLB1-R
CAM ON
SWR01
MPU10992MLB1-L
RR37
100K
CNR01
52465-4091
1 UNREG
2 GND
3 UNREG
4 GND
5 UNREG
6 GND
7 UNREG
8 BATT_V_DET
9 CURRENT_V_DET
10 BATT_UNREG
11 DC_JACK_DET
12 CHG_CTL
13 ATF_ERROR
14 BATT_SW_DET
15 EJECT_SW
16 SYS_3V
17 VCR_SW
18 CAM_SW
19 GND
20 START/STOP_KEY
21 ENVE_OUT
22 PI_MODE
23 GND
24 HEAD_SW
25 MENU_UP
26 MENU/ENTER_KEY
27 MENU_DOWN
28 DECK_SHIFT
29 GND
30 LI_BATT
31 GND
32 CHG_LED
33 PI_SO
34 PI_SCK
35 PI_CS
36 PI_SI
37 W_X1
38 W_MODE1
39 W_SV2_RESET
40 W_SYS2.5V

3-18 Top


SW01
2102-001019
GND
ZOOM_AD
SS3V
1
2
3
R2
10ohm
R1
470
CNLF06
53261-0490
GND
ZOOM_AD
PHOTO_KEY
SS3V
1
2
3
4
SW02
3404-001130
1
2

MEMO